

BOEHLKENCHELYS LONGIDENTATA, A NEW
GENUS AND SPECIES OF CHLOPSID EEL
(TELEOSTEI: ANGUILLIFORMES)
FROM THE INDO-WEST
PACIFIC REGION

Kenneth A. Tighe

Abstract.—*Boehlkenchelys longidentata*, a new genus and species belonging to the family Chlopsidae, is described from the Indo-West Pacific. The genus and species is unique in the combination of the presence of a pectoral fin, uniserial vomerine dentition, high preopercular-mandibular pore counts and lateral position of posterior nostril.

The most recent reviews of the family Chlopsidae were those of Böhlke & Smith (1968), and Smith (1989). Böhlke & Smith (1968) recognized seven genera, while Smith (1989) described a new genus, bringing the total to eight. Recent collecting in the Fiji Islands and the Chagos Archipelago yielded six specimens of an undescribed species of eel that clearly belongs in this family, but does not fit in any of the nominal genera. Several additional specimens had been located in the collections of the Bishop Museum by the late James Böhlke, and were under study by him at the time of his death.

Methods and Materials

General methods for morphometric and meristic data for this study are given in Böhlke (1989). All measurements are given as a proportion of the total length (TL) except for subunits of the head which are presented as proportions of the head length (HL). Vertebral and fin ray counts were taken from radiographs. Total vertebral counts are of all elements including the hypural plate. Preanal and predorsal vertebral counts were taken using the definitions of Böhlke (1982). Precaudal vertebral counts include all elements up to the first vertebra with a distinct, posteriorly directed haemal spine. Meristic

and morphometric data for the type series are presented with the values of the holotype first and the range of values of the paratypes given in brackets. The specimens are deposited at the Royal Ontario Museum (ROM), the Bernice P. Bishop Museum (BPBM), the National Museum of Natural History (USNM) and the Academy of Natural Sciences, Philadelphia (ANSP).

Boehlkenchelys, new genus

Diagnosis.—Distinguished from all other chlopsid genera by the following combination of characters: vomerine teeth in a single, irregular, median series; dorsal fin originating over or slightly anterior to the gill opening; pectoral fin present; posterior nostril a simple elliptical opening in front of mid-eye. For other characters, see the description below of *Boehlkenchelys longidentata*, the type species by original designation and monotypy.

Remarks.—*Boehlkenchelys* can be distinguished from most other chlopsid genera by the vomerine dentition. Only *Robinsia* and *Linkenchelys* have a single, median series of vomerine teeth. *Boehlkenchelys* can be distinguished from *Robinsia* by the presence of a pectoral fin. *Linkenchelys*, described by Smith (1989) as a chlopsid, also



Fig. 1. Holotype of *Boehlkenchelys longidentata*, ROM 46990, 199 mm TL; North Astrolabe Reef, Fiji.

has a single, median series of vomerine teeth and a pectoral fin. It can be distinguished from *Boehlkenchelys* by its more posterior dorsal fin origin. Also, studies of additional specimens of *Linkenchelys* by the author and D. G. Smith have shown that this genus does not belong in the family Chlopsidae.

Etymology.—In recognition of their many contributions to the study of eels, the generic name is derived from the surname of Eugenia B. Böhlke and the late James E. Böhlke, and from *enchelys* (eel). The gender is feminine.

Boehlkenchelys longidentata, new species
Figs. 1–3

Kaupichthys nuchalis (not of Böhlke).—
Winterbottom et al., 1989:6.

Holotype.—ROM 46990 (199 mm total length); Fiji, North Astrolabe Reef, on outer edge of reef on western side, 122–213 ft, 18°37'06"S, 178°30'21"E; A. R. Emery, R. Winterbottom, J. Payne and R. McKinnon; 24 Mar 1983.

Paratypes.—ROM 51964 (1, 132); same data as holotype. ROM 46989 (1, 162,



Fig. 2. *Boehlkenchelys longidentata*, ROM 46990, Holotype, 199 mm TL; head.

cleared and stained); Fiji, Usborne Pass to Astrolabe Reef, on the south part, on the outside of the reef, 20–23 m, 18°42'24"S, 178°30'15"E; A. R. Emery et al.; 21 Mar 1983. ROM 42505 (1, 61); Chagos Archipelago, Peros Banhos, Isle Fouquet, offshore reef, 40–43 m, 5°27'03"S, 71°48'57"E; A. R. Emery et al.; 8 Mar 1979. ROM 42506 (1, 201) and USNM 317168 (out of ROM 42506, 1, 145); Chagos Archipelago, Salomon Islands, between Isle Diabole and Isle Anglaise, 60–80 ft, 5°20'38"S, 72°12'38"E; R. Winterbottom et al.; 18 Mar 1979. BPBM 9420 (1, 114); Palau Islands, SW edge of Augulpelu Reef, 110–170 ft; J. E. Randall, A. R. Emery and E. S. Helfman; 22 Apr 1970. BPBM 19302 (1, 180); Molucca Islands, Ambon Island, point at NW side of village of Silale, SE side of Ambon Bay, 24–33 m; J. E. Randall and G. R. Allen; 25 Jan 1975. ANSP 163975 (1, 60); Fiji, Viti Levu, 100 yards S of E side of Mbengga Island, ca. 20 nautical miles SW of Suva Harbor, ca. 12–18 m; W. Smith-Vaniz et al.; 14 Apr 1974.

Diagnosis. — As for the genus.

Description. — Total vertebrae 125 (121–128), predorsal vertebrae 7 (6–8), preanal vertebrae 37 (34–37), precaudal vertebrae 95 (88–95). Dorsal-fin rays 363 (340–373), anal-fin rays 281 (253–294), pectoral-fin rays 16 (cleared and stained paratype). Proportions as percent of TL: predorsal length 12.6 (11.5–14.4), preanal length 37.2 (33.0–37.7), head length 13.1 (12.6–14.8), depth at anus 5.0 (4.6–7.6), pectoral-fin length 3.1 (2.8–3.8). Proportions as percent of head length: eye diameter 14.6 (12.2–16.2), interorbital width 15.4 (13.3–16.2), snout length 23.8 (21.5–24.5), tip of snout to rictus of jaw 46.9

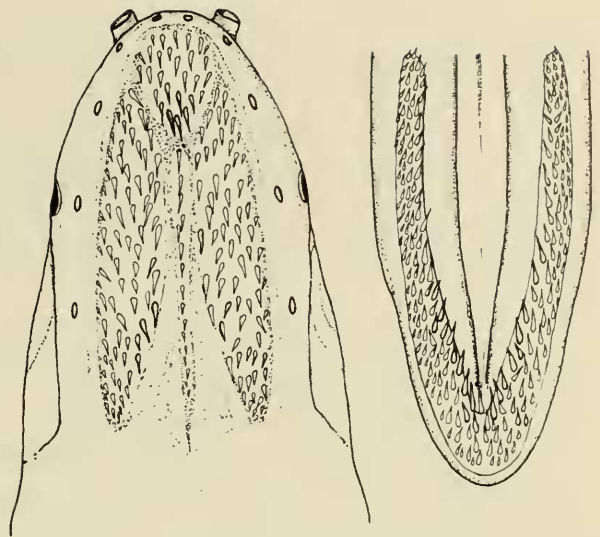


Fig. 3. *Boehlkenchelys longidentata*, ROM 46990, Holotype, 199 mm TL; dentition.

(38.9–49.0), pectoral-fin length 23.8 (18.9–28.8).

Body moderately elongate, slightly compressed. Dorsal fin begins above or slightly anterior to gill opening (Fig. 2). Pectoral fin well developed, rounded, almost twice eye diameter in length. Head moderate in length, relatively deep. Snout relatively deep, obtuse. Gape moderate, rictus behind posterior margin of eye. Anterior nostril tubular, slightly behind tip of snout, directed anterolaterally. Posterior nostril a simple elliptical opening in front of middle of eye.

Lateral line on body obsolete except for two (three in one paratype) pores in branchial region (Fig. 2). Supraorbital pores three: first (ethmoidal) at anteroventral tip of snout, second anteromedial to base of anterior nostril, and last above and behind anterior nostril. Infraorbital pores four: first just behind anterior nostril, second midway between anterior and posterior nostrils, third below posterior nostril, and last below middle of eye. Preoperculomandibular pores eight, seven before rictus and one behind.

Teeth long, slender, needle-like, depressible. Maxillary teeth (Fig. 3) in 6–7 irregular rows, increasing in size from outer to inner, a total of 14–18 teeth in the inner row. Mandibular teeth like those of the maxilla, except in 5–6 irregular rows with 18–24 teeth

in the inner row. Vomerine dentition in a single, sometimes irregular row of 12–26 teeth.

Color of body uniform light olive-brown to brown; base of dorsal fin, caudal fin and posterior portion of anal fin darker. Colors in life similar (from color photograph of holotype).

Etymology.—The name *longidentata* is from the Latin *longus* and *dentatus*, in reference to the long, needle-like teeth.

Remarks.—One of the paratypes (ROM 42506, 201 mm TL) is a subadult to adult female with well developed ova 0.8–1.0 mm in diameter. This is probably close to the maximum size for this species.

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Department of Vertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560, U.S.A.